

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for discovering and configuring network devices into a cluster, ~~said~~ the method comprising:

automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets;

determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices; and

presenting to a user a list of the candidate network devices that are qualified to join the cluster.

~~adding one or more of the candidate devices to the cluster to be managed and configured via a commander network device of the cluster.~~
- 2-57. (Cancelled)
58. (Previously Presented) The method according to claim 1, wherein the candidate network devices transmit the discovery packets to a multicast address.
59. (Previously Presented) The method according to claim 1, wherein the discovery packets comprise Layer 2 messages.
60. (Previously Presented) The method according to claim 59, wherein the discovery packets comprise Media Access Control (MAC) Layer messages.

61. (Previously Presented) The method according to claim 1, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets.
62. (Previously Presented) The method according to claim 1, wherein the qualification includes that the candidate device is not an active member of another cluster.
63. (Previously Presented) The method according to claim 1, further comprising:
maintaining, at each of the candidate devices, a database containing information about
neighbor candidate devices.
64. (Currently Amended) The method according to claim 63, further comprising:
transmitting, in response to ~~said~~ the adding, the information about the neighbor candidate
information to the commander network device from each member network device which
just joined the cluster.
65. (Currently Amended) The method according to claim 1, further comprising:
prior to the adding, presenting to a user a list of the candidate network devices qualified to
join the cluster ~~prior to said adding~~.
66. (Currently Amended) A method for discovering candidate network devices to be configured
into a cluster of network devices and managed via a commander network device, ~~said~~ the
method comprising:

automatically detecting, at the commander network device, first candidate network devices
by receiving discovery packets from the candidate network devices directly connected to
the commander network device, the candidate network devices periodically transmitting
the discovery packets, the discovery packets including information indicating that the
candidate network device is capable of belonging to a cluster;
determining whether any of the first candidate network devices is qualified to join the cluster
by applying qualification rules to the discovery packets; and
presenting to a user a list of the first candidate network devices qualified to join the cluster.

67. (Previously Presented) The method in accordance with claim 66, wherein the discovery packets comprise Layer 2 messages.

68. (Previously Presented) The method according to claim 66, wherein the qualification includes that the candidate device is not an active member of another cluster.

69. (Previously Presented) The method in accordance with claim 66, further comprising:
storing the information received from the candidate network devices in a database of the
commander network device.

70. (Previously Presented) The method in accordance with claim 66, further comprising:
maintaining, at each of the candidate network devices, a neighbor device database containing
information about other candidate network devices directly connected to the candidate
network device.

71. (Previously Presented) The method in accordance with claim 70, further comprising:
updating, at each of the candidate network devices, the neighbor device database in response to the discovery packets received from the other candidate network devices.
72. (Previously Presented) The method in accordance with claim 70, further comprising:
adding one or more of the first candidate network devices to the cluster, each of the added first candidate devices becoming a member of the cluster.
73. (Currently Amended) The method in accordance with claim 72, further comprising:
transmitting, in response to ~~said~~ the adding, the neighbor device database information to the commander network device from member network device which just joined the cluster.
74. (Previously Presented) The method in accordance with claim 73, wherein the neighbor device database information is transmitted using user datagram protocol (UDP) packets.
75. (Previously Presented) The method in accordance with claim 73, further comprising:
automatically detecting, at the commander network device, second candidate network devices connected to the member network device which just joined the cluster, by receiving the neighbor device database information from the member network device.
76. (Previously Presented) The method in accordance with claim 75, further comprising:
storing the received neighbor device database information in a database of the commander network device.

77. (Previously Presented) The method in accordance with claim 75, further comprising:

presenting to a user a list of the first and second candidate network devices qualified to join the cluster.

78. (Currently Amended) A method for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, ~~said~~ the method comprising:

periodically transmitting discovery packets from the candidate network devices, the

discovery packets including information indicating that the candidate network device is capable of belonging to a cluster;

maintaining, at each of the candidate network devices, a neighbor device database containing information about other candidate network devices directly connected to the candidate network device; and

transmitting the information in the neighbor device database to the commander network device when the candidate network device is added to the cluster, all communication with network devices in the cluster being through a single network address assigned to the commander network device.

79. (Previously Presented) The method in accordance with claim 78, further comprising:

receiving, at each of the candidate network devices, the discovery packets from its neighbor candidate devices; and

updating, at each of the candidate network devices, the neighbor device database in response to the received discovery packets.

80. (Previously Presented) The method in accordance with claim 78, wherein the discovery packets comprise Layer 2 messages.
81. (Currently Amended) A commander network device for discovering and configuring network devices into a cluster, ~~said~~ the commander network device comprising: discovery protocol logic to automatically detect candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets; and qualification rule circuitry to determine whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices; ~~and, the device further configured to present to a user a list of the~~ candidate network devices that are qualified to join the cluster. ~~cluster management logic to add one or more of the candidate devices to the cluster, each of the added network devices becoming a member of the cluster to be managed and configured via the commander network device.~~
82. (Previously Presented) The commander network device according to claim 81, wherein the discovery packets comprise Layer 2 messages.
83. (Previously Presented) The commander network device according to claim 82, wherein the discovery packets comprise Media Access Control (MAC) Layer messages.

84. (Previously Presented) The commander network device according to claim 81, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets.
85. (Previously Presented) The commander network device according to claim 81, wherein the qualification includes that the candidate device is not an active member of another cluster.
86. (Currently Amended) The commander network device according to claim 81, wherein ~~said~~ the discovery protocol logic is further to receive information about neighbor candidate network devices transmitted from a member network device which just joined the cluster, each of the candidate network devices and member network devices maintaining database containing information about their neighbor candidate devices.
87. (Previously Presented) The commander network device according to claim 81, further comprising:
logic to generate a list of the candidate network devices qualified to join the cluster.
88. (Currently Amended) A commander network device for discovering candidate network devices to be configured into a cluster, ~~said~~ the commander network device comprising:
discovery protocol logic to automatically detect first candidate network devices by receiving the discovery packets from the candidate network devices directly connected to the commander network device, each of the candidate network devices periodically transmitting discovery packets including information indicating that the candidate network device is capable of belonging to a cluster;

qualification rule circuitry to determine whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets; and logic to present to a user ~~generate~~ a list of the first candidate network devices qualified to join the cluster.

89. (Previously Presented) The commander network device in accordance with claim 88, wherein the discovery packets comprise Layer 2 messages.

90. (Previously Presented) The commander network device according to claim 88, wherein the qualification includes that the candidate device is not an active member of another cluster.

91. (Previously Presented) The commander network device in accordance with claim 88, further comprising:
a database to store the information received from the candidate network devices.

92. (Previously Presented) The commander network device in accordance with claim 88, further comprising:
cluster management logic to add one or more of the first candidate network devices to the cluster, the added first candidate device becoming a member of the cluster.

93. (Currently Amended) The commander network device in accordance with claim 88, wherein each of the candidate network devices maintains a neighbor device database containing information about other candidate network devices directly connected to the candidate network device, and

wherein ~~said~~ the discovery protocol logic is further to receive information about neighbor candidate network devices from a member network device which just joined the cluster.

94. (Currently Amended) The commander network device in accordance with claim 93, wherein ~~said~~ the discovery protocol logic is further to automatically detect second candidate network devices connected to the member network device which just joined the cluster, in response to the received information about the neighbor candidate network devices.

95. (Currently Amended) The commander network device in accordance with claim 94, wherein ~~said~~ the logic to generate the list further generates a list of the first and second candidate network devices qualified to join the cluster.

96. (Currently Amended) A network device capable of being configured into a cluster of network devices and managed via a commander network device, ~~said~~ the network device comprising:

discovery protocol logic to periodically transmit discovery packets, the discovery packets including information indicating that the network device is capable of belonging to a cluster;

a neighbor device database to store information about other candidate network devices directly connected to the network device, other candidate network devices being capable of configured into a cluster; and

logic to transmit the information in the neighbor device database to the commander network device when the network device is added to the cluster, the network device configured

to communicate through a single network address assigned to the commander network device.

97. (Currently Amended) The network device in accordance with claim 96, wherein ~~said~~ the discovery protocol logic further to receive the discovery packets from its neighbor candidate devices, ~~said~~ the network device further comprising:
logic to updating the neighbor device database in response to the received discovery packets.

98. (Previously Presented) The network device in accordance with claim 96, wherein the discovery packets comprise Layer 2 messages.

99. (Currently Amended) An apparatus for discovering and configuring network devices into a cluster, ~~said~~ the apparatus comprising:
means for automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets;
means for determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices; and
means for presenting to a user a list of the candidate network devices that are qualified to join the cluster.
~~means for adding one or more of the candidate devices to the cluster to be managed and configured via a commander network device of the cluster.~~

100.(Previously Presented) The apparatus according to claim 99, wherein the candidate network devices transmit the discovery packets to a multicast address.

101.(Previously Presented) The apparatus according to claim 99, wherein the discovery packets comprise Layer 2 messages.

102.(Previously Presented) The apparatus according to claim 101, wherein the discovery packets comprise Media Access Control (MAC) Layer messages.

103.(Previously Presented) The apparatus according to claim 99, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets.

104.(Previously Presented) The apparatus according to claim 99, wherein the qualification includes that the candidate device is not an active member of another cluster.

105.(Previously Presented) The apparatus according to claim 99, further comprising:
means for maintaining, at each of the candidate devices, a database containing information about neighbor candidate devices.

106. (Currently Amended) The apparatus according to claim 105, further comprising:
means for transmitting, in response to ~~said~~ the addition of a member, the information about the neighbor candidate information to the commander network device from each member network device which just joined the cluster.

107. (Currently Amended) The apparatus according to claim 99, further comprising:

means for prior to the addition, presenting to a user a list of the candidate network devices qualified to join the cluster ~~to a user prior to said addition~~.

108. (Currently Amended) An apparatus for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, ~~said~~ the apparatus comprising:

means for automatically detecting first candidate network devices by receiving discovery packets from the candidate network devices directly connected to the commander network device, the candidate network devices periodically transmitting the discovery packets, the discovery packets including information indicating that the candidate network device is capable of belonging to a cluster;

means for determining whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets; and

means for presenting to a user a list of the first candidate network devices qualified to join the cluster.

109.(Previously Presented) The apparatus in accordance with claim 108, wherein the discovery packets comprise Layer 2 messages.

110.(Previously Presented) The apparatus according to claim 108, wherein the qualification includes that the candidate device is not an active member of another cluster.

111.(Previously Presented) The apparatus in accordance with claim 108, further comprising:

means for storing the information received from the candidate network devices in a database of the commander network device.

112.(Previously Presented) The apparatus in accordance with claim 108, further comprising:

means for adding one or more of the first candidate network devices to the cluster, the added first candidate device becoming a member of the cluster.

113.(Previously Presented) The apparatus in accordance with claim 112, wherein each of the

candidate network devices maintains a neighbor device database containing information about other candidate network devices directly connected to the candidate network device, and each of the member network devices which just joined the cluster transmits the neighbor device database information to the commander network device.

114.(Previously Presented) The apparatus in accordance with claim 113, wherein the neighbor

device database information is transmitted using user datagram protocol (UDP) packets.

115.(Previously Presented) The apparatus in accordance with claim 113, further comprising:

means for automatically detecting second candidate network devices connected to the member network device which just joined the cluster, by receiving the neighbor device database information from the member network device.

116.(Previously Presented) The apparatus in accordance with claim 115, further comprising:

means for storing the received neighbor device database information in a database of the commander network device.

117.(Previously Presented) The apparatus in accordance with claim 115, further comprising:
means for presenting to a user a list of the first and second candidate network devices qualified to join the cluster.

118. (Currently Amended) An apparatus for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, ~~said~~ the apparatus comprising:
means for periodically transmitting discovery packets from the candidate network devices, the discovery packets including information indicating that the candidate network device is capable of belonging to a cluster;
means for maintaining, at each of the candidate network devices, a neighbor device database containing information about other candidate network devices directly connected to the candidate network device; and
means for transmitting the information in the neighbor device database to the commander network device when the candidate network device is added to the cluster.

119.(Previously Presented) The apparatus in accordance with claim 118, further comprising:
means for receiving, at each of the candidate network devices, the discovery packets from its neighbor candidate devices; and
means for updating, at each of the candidate network devices, the neighbor device database in response to the received discovery packets.

120.(Previously Presented) The apparatus in accordance with claim 118, wherein the discovery packets comprise Layer 2 messages.

121.(Currently Amended) A computer readable medium which stores instructions which are executable on a computer in which ~~said~~ the instructions perform a method for discovering and configuring network devices into a cluster, ~~said~~ the method comprising:
automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets;
determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packets received from the candidate devices; and
presenting to a user a list of the candidate network devices that are qualified to join the cluster.

~~adding one or more of the candidate devices to the cluster to be managed and configured via a commander network device of the cluster.~~

122. (Currently Amended) A computer readable medium which stores instructions which are executable on a computer in which ~~said~~ the instructions perform a method for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, ~~said~~ the method comprising:
automatically detecting, at the commander network device, first candidate network devices
by receiving discovery packets from the candidate network devices directly connected to the commander network device, the candidate network devices periodically transmitting

the discovery packets, the discovery packets including information indicating that the candidate network device is capable of belonging to a cluster;
determining whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets; and
presenting to a user a list of the first candidate network devices qualified to join the cluster.

123.(Currently Amended) The program storage device in accordance with claim 122, wherein ~~said~~ the method further comprises:

adding one or more of the first candidate network devices to the cluster, each of the added first candidate devices becoming a member of the cluster.

124.(Currently Amended) The program storage device in accordance with claim 122, wherein ~~said~~ the method further comprises:

storing the information received from the candidate network devices in a database of the commander network device.

125.(Currently Amended) A computer readable medium which stores instructions which are executable on a computer in which ~~said~~ the instructions perform a method for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, ~~said~~ the method comprising:

periodically transmitting discovery packets from the candidate network devices, the discovery packets including information indicating that the candidate network device is capable of belonging to a cluster;

maintaining, at each of the candidate network devices, a neighbor device database containing information about other candidate network devices directly connected to the candidate network device; and

transmitting the information in the neighbor device database to the commander network device when the candidate network device is added to the cluster, all communication with network devices in the cluster being through a single network address assigned to the commander network device.

126.(Currently Amended) The program storage device in accordance with claim 125, wherein ~~said~~ the method further comprises:

receiving, at each of the candidate network devices, the discovery packets from its neighbor candidate devices; and

updating, at each of the candidate network devices, the neighbor device database in response to the received discovery packets.

127.(New) The method of Claim 1 wherein all communication with network devices in the cluster is through a single network address assigned to the commander network device.

128.(New) The device of Claim 81 wherein all communication with network devices in the cluster is through a single network address assigned to the device.

129.(New) The apparatus of Claim 99 wherein all communication with network devices in the cluster is through a single network address assigned to the device.